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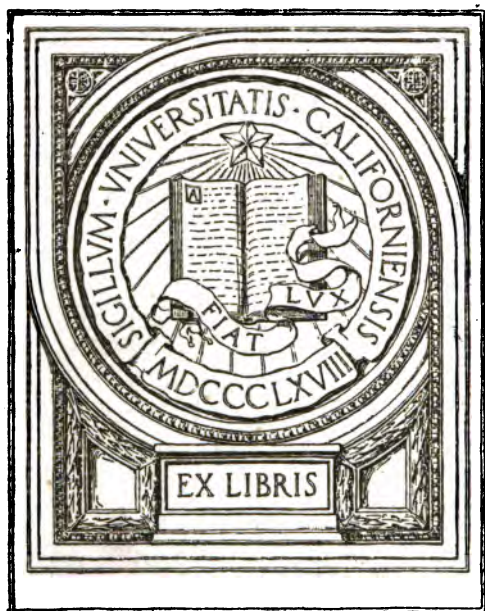


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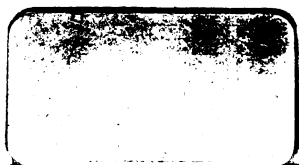


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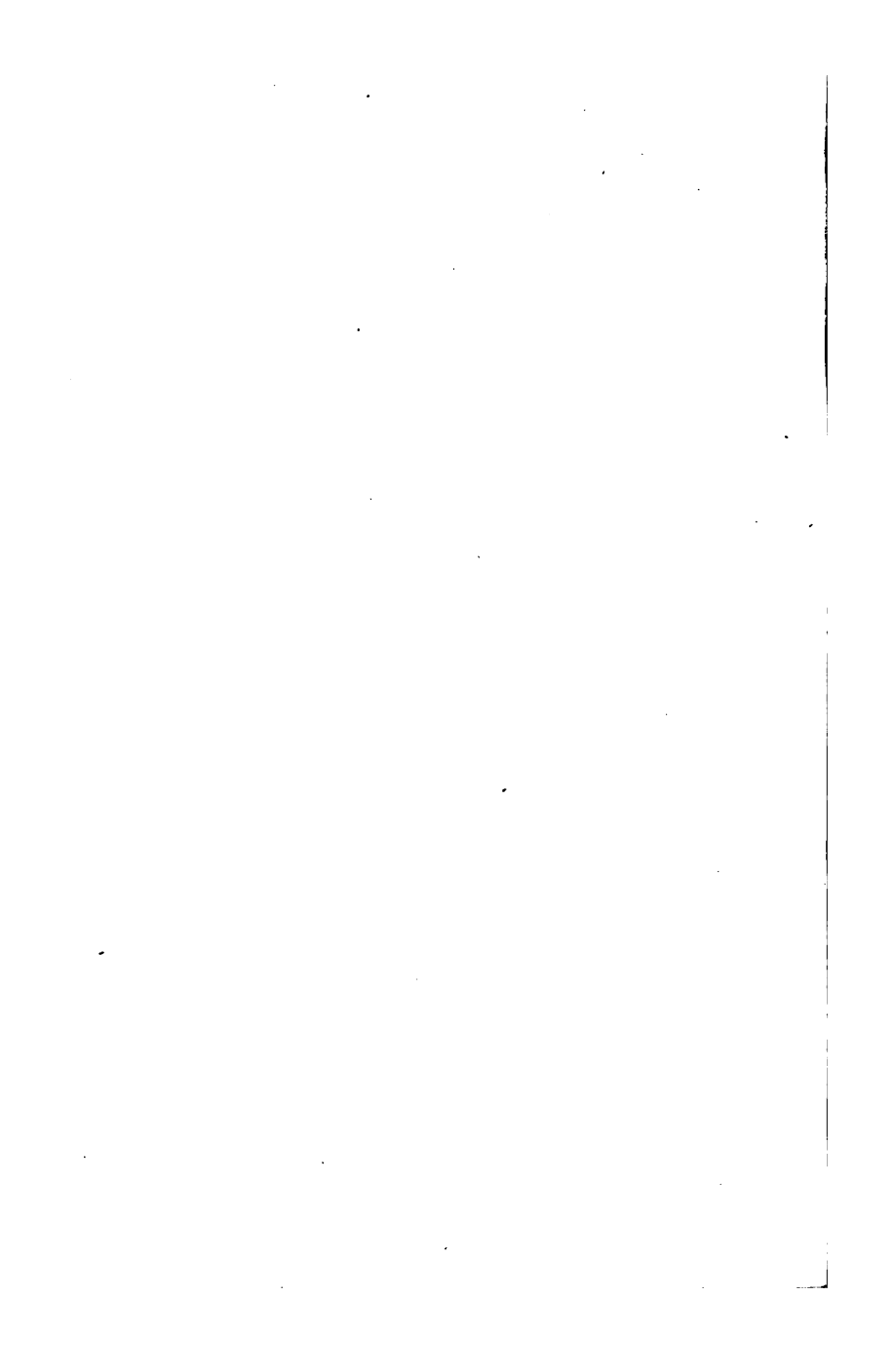
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THE CARE OF THE SKIN

**SOME COMMON DISEASES
OF THE SKIN AND THE
SIMPLEST MEASURES BY
WHICH TO AVOID THEM**

BY

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IN HARVARD UNIVERSITY**



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PRESENTING the substance of some of the public lectures delivered at the Medical School of Harvard University, this series aims to provide in easily accessible form modern and authoritative information on medical subjects of general importance. The following committee, composed of members of the Faculty of Medicine, has editorial supervision of the volumes published:

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THE CARE OF THE SKIN

THE CARE OF THE SKIN
SOME COMMON DISEASES OF THE SKIN
AND THE SIMPLEST MEASURES
BY WHICH TO AVOID THEM

ECZEMA

THE first disease to be considered in this category is naturally eczema — or salt rheum — an affection which constitutes numerically one fifth of all the cases which the dermatologist is called upon to treat. No period of life is immune from the attacks of this disease. The youngest baby or the oldest man may become afflicted, while a few unfortunate individuals may remain its victims throughout long periods of their lives.

The cause of eczema is at present unknown, despite the repeated and continued search of scientific investigators.

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At the present moment we believe that inability to digest certain varieties of food, especially fats and the starches, plays a decided part in certain eczemas of infancy and possibly in those of later life; but heredity, diet, teething, bacteria, the presence of systemic diseases such as rheumatism and gout, asthma, dyspepsia, debility, diabetes, renal or nervous affections, malaria, and varicose veins have all been, and still are, associated in physicians' minds with outbreaks of eczema. But not one, or all, of these abnormal conditions can be termed the actual cause of the disease, in the way that the bacillus of tuberculosis is known to be the actual cause of consumption. These conditions undoubtedly pave the way, prepare the soil, let us say, for the future inoculation, of some definite factor, and eczema appears. There is no need for me to describe this Protean disease. We all know the red, weeping surfaces, the intolerably itchy,

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red pimples, the rough, thickened areas, and the many other disfiguring and uncomfortable phenomena which eczema may evoke on our hands and faces, or in fact on any part of our bodies; but in our ignorance of its definite cause, what can we do to prevent its occurrence; or if it has occurred, what can we do to hasten its disappearance ?

Let us begin with the baby. When the child is born, it is covered with a greasy substance called the *vernix caseosa*, which nature wisely provides against the maceration of the skin in the watery cradle within the mother's body. This fatty material is easily removed from the child's body by its first soap and water bath; but on the scalp, owing to the presence of hair, the *vernix* becomes caked and adherent, and cannot be so easily dissolved. Then the mother or unskillful nurse loses courage and fears to injure the delicate head by too vigorous scrubbing. This is a bad blunder, for like all

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fats which are exposed to warmth and moisture, the so-called cradle cap easily becomes rancid, and the consequent irritation soon may give rise to the condition which we know as eczema. Do not fail, then, to rid the child's scalp of this coating, which is quite superfluous in the outer world. If the first washing fails to remove it, soak the scalp with sweet oil and continue to shampoo gently until the last vestige of this useless and often harmful substance has entirely disappeared.

The delicate skin of a baby is very susceptible to the many irritating discharges which assail it. If the nose runs, at once wipe it and the upper lip gently with a soft piece of old linen; if the discharge is abundant and frequent, smear the adjacent skin with cold cream. In case the baby drools or regurgitates its milk, clean the mouth and chin promptly with a moist cloth. A recent English observer, in an analysis of one hundred instances of infantile eczema, has found

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that ninety per cent of the cases begin on the head and face, so that one cannot be too careful to remove these deleterious substances at the earliest possible moment. If the baby is fat, wash out the folds of the neck, arms, groins, buttocks, and thighs in the daily bath, and dust in an abundance of talcum powder to absorb the future moisture, for, if neglected, these pockets easily become hot-beds for bacteria and produce a variety of eczema which we call intertrigo. Never allow a veil to touch the baby's nose or mouth or chin, for the moisture from breathing and the watery discharges to which I have already referred become even more irritating by retention, and in cold weather will chill the skin or even freeze it.

The baby should be bathed every morning with warm water and soap, and in the first months of its life the scalp should share in this daily washing. Any good simple soap will do; with the baby as well as with yourself, remember that

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medicated soaps are unnecessary, and usually harmful to the normal skin. In order to insure the thorough drying of the integument after brisk rubbing with a soft towel, dust some standard absorbent powder over the surface, and let me remind you again not to forget the deep cutaneous folds of the fat baby. And one warning more, — do not dress the infant too warmly or put flannel next to the skin. Personally, I feel that many a baby owes its eczema, especially in the warm months, to the layer upon layer of cotton and flannel which the too careful mother (in particular the young and inexperienced one) heaps on her poor offspring.

If eczema has developed, be sure to have your doctor examine the stools, for nowadays the skillful man can tell if the baby, whether breast-fed or bottle-fed, is properly digesting its food. If there is undigested fat or starch present, the diminution in the milk of the superfluous ingredient may, with proper external ap-

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plications, effect a rapid amelioration, or even cure the disease.

With older children eczema is less frequent. We must again, however, guard against the irritation caused by running noses or ears. See to these abnormal conditions at once, for they are frequently our first warnings of underlying and often dangerous troubles. If the child attends a public school remember that its near neighbor may not be very carefully groomed. Public school children, for instance, are notoriously afflicted with head lice. You may not find the living animal, but close inspection of the hair, especially around the ears, will often reveal the "nit" — the egg from which this disagreeable parasite is born. The "nit" is a gray or brown, glistening, oval object, rather minute, glued to the side of the hair shaft. It is not to be confused with scales or dandruff. The "nit" sits on the side of the hair; the scale is usually pierced by the hair or else re-

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mains on the scalp. The presence of lice or their eggs usually leads to some cutaneous eruption, but fortunately these offending substances can be eradicated by the thorough application of crude petroleum or tincture of larkspur, followed by a vigorous shampoo and the careful combing of the hair with an extremely fine comb dipped in vinegar.

Adult men and women are frequently victims of salt rheum. Remember, please, the possible digestive disabilities, the rather long list of general diseases, which, I told you, pave the way for a future eczematous outbreak on the skin; and under such circumstances be more than ever careful not to scratch or subject the outer surface of the body to external irritations. Some trades or occupations are inimical to the welfare of the skin. Among men, sugar-workers, bakers, dyers, masons, plasterers, printers, stationary firemen, chemists, and surgeons often fall a prey to the disease; while in the

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opposite sex, scrubwomen, dish-washers, laundresses, cooks, and nurses are the most frequent victims. Such predisposed individuals should take all possible care to protect their hands with gloves of cotton, heavy leather or, if necessary, rubber, during their working hours.

Before leaving this most common disease I want to draw the attention of the more athletic readers to a special type of eczema to which they are peculiarly liable. This is a variety which begins in the arm pits or the groins, and spreads gradually downwards to the adjacent limbs, with a sharply defined lower border. Dermatologists term this condition *eczema marginatum*, but the laity speak of it as "red flap." Although it has been regarded as a variety of eczema, it is now recognized as being in reality an uncommon type of ring-worm. Athletic people of course grow warm in their various forms of exercise, and are prone to lay aside their running or other togs,

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still moist, in a tightly closed, dark and damp gymnasium or club locker; and then to continue this practice for an indefinite period before these unhygienic garments find their way to the laundry. Do not do this, and do not borrow anybody's clothes. Think how much more careful than usual one should be with garments which have been worn in such bodily exertions.

If, despite all the precautions to which I have drawn your attention, eczema develops, go at once to a skilled physician and seek his aid. I am aware of no other disease so amenable to early treatment, and on the other hand, I know of no other cutaneous affection so obstinate when neglected. Very often eczema, when left to its own devices, will not remain localized. It may at first appear on the face or hands, but soon other parts of the body become affected: in fact one focus of eczema seems able to involve the whole cutaneous surface. Then, too late,

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you realize that neglect has cost you dear.

DERMATITIS

Let us consider next an inflammatory condition of the skin closely allied to eczema, but in which the exact cause can be more certainly recognized. We call this great class of eruptions dermatitis and separate it into three chief subdivisions, according to the nature of their origin:— *Dermatitis venenata*, if the irritant has come into direct contact with the skin from without; *Dermatitis medicamentosa*, if a disturbing medicine has been brought (from within by the blood) to the outer surface of the body; and *Dermatitis calorica*, if the skin has been subjected to too great heat or too great cold.

Dermatitis Venenata. Amateur treatment of the skin, as of all other parts of the body, is as old as medicine itself. Much of it is a necessity and often harm-

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less, but many household remedies prove distinctly vicious, and certain "quack" medicines are notoriously irritating to susceptible skins. The use of domestic poultices, many of which are composed of such highly irritating substances as tobacco, mustard, onions, etc., should be deprecated, since, apart from the damage they produce on the skin, their use often entails deeper injury. Home treatment of wounds and sprains often leads to further complications. A few years ago it was customary to employ arnica, and many a skin has suffered in consequence. Later the laity and apothecaries were stout advocates of the healing powers of carbolic acid, but it was followed by irritated skins and even by gangrene, because even in very weak solutions this substance, when hidden from the air by thick bandages, is capable of producing deep destruction of the tissues. Now it is the fashion to use all sorts of advertised preparations in vari-

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ous emergencies, and dermatologists are constantly treating patients who suffer from their too stimulating, or drying, or other noxious effects. There are many similarly harmful skin applications, but let me particularly emphasize the cheap hair dye. The lesson to be drawn from these few citations is that after all a competent physician is the best person to consult in times of physical distress.

You all know the mischief that poison ivy can produce on the skin. You know that some fortunate individuals are immune from the irritating volatile oil which the plant contains, but most people, on the contrary, are susceptible to its influence in spring and summer when they allow the twigs or leaves to brush against their hands and faces, when they pick the gorgeous red leaves in autumn, or when they cut the wood in winter. In a few hours the affected skin begins to tingle; and by the following

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day little pimples or blisters develop, which in the more severe cases may reach the size of hens' eggs and cause great distress. Perhaps some of you have seen such unfortunate people with their eyes closed, their hands and arms swollen to twice the normal size, and their skins on fire from the intense inflammation and itching.

What can be done to prevent such a pitiful experience? In the first place, as soon as you are aware that this plant has touched you, go home and bathe the skin in alcohol, and wash it in soap and warm water. These convenient remedies neutralize and dissolve the poison, and if applied sufficiently early, are capable of preventing any evil consequence. The contact may have been unsuspected, and you may not recognize the elongated, glistening, clustered, three-leaved vine which grows so abundantly along our walls and fences and climbs so vigorously into our trees. When dermatitis de-

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velops, do not bandage the eruption or apply ointments, but dust profusely with some mild absorbent powder over the blisters, until you can go to some competent physician, who will recommend rest in a cool room, a light diet, loose clothes, a soothing evaporating lotion to allay the itching, and a cooling drink to relieve the skin of its excretory function and throw this work on the kidneys. Under such care even a severe attack of ivy poisoning should not last more than a few days. Prolonged outbreaks are usually the result of late or injudicious treatment.

I have chosen *Rhus toxicodendron* to illustrate *Dermatitis venenata* because it is one of the commonest causes; but remember that many other plants are capable of producing the same type of inflammation. Many of you are perhaps unaware that a very pretty primrose, *Primula obconica*, is equally treacherous. The blossoms of this apparently innocent plant used to be quite small, forming a

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cluster of from six to eight delicate lavender flowers on a long stem; nowadays florists have produced much larger blossoms, which may also be red or pink. The leaves are disproportionately large and roundly conical with regular edges. It is probably the hair-like spines that cover the stems which must be held culpable in this case; and the ensuing dermatitis is not apt to be in the form of blisters, but rather to appear as firm pink blotches over the face and neck and hands.

If any of you have been the victims of noxious plants, remember that you will always be more susceptible, to such an extent, perhaps, that any plant which secretes a sticky juice or bears small spines will inflame your skin when touched. These previous attacks will not recur without cause — that is a popular fallacy — but in the future it will be worth while to wear gloves when at work in the garden or woods.

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A new malefactor has recently been added to our list of things to be avoided. Dr. E. E. Tyzzer of the Harvard Medical School has conclusively demonstrated that brown-tail moths accomplish their mischief by means of tiny, poisonous, one-pronged darts which fly through the air during the caterpillar season. These same shafts may invade the skin if one handles the caterpillar or its nest. In the early summer, therefore, avoid their haunts if possible, and do not forget that clothes should be dried indoors if the wind comes from an infested area; for I have treated cases of this most distressing condition which could be explained in no other way than by contact with spine-bearing body-linen. An attack of this disease is not a trivial matter; immediate relief cannot be obtained even from a skillful physician, for we now know that foreign bodies deep in the skin produce the intense itching, and that time is necessary to dissolve these irri-

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tants. Of course frequent applications of suitable washes and ointments will produce transitory relief; but patience and forbearance must be called upon to tide one over the five to seven days before the poisonous shafts are finally absorbed.

A few years ago, before it was the custom for poor as well as rich to wear furs, and before the advent of the motor car had increased the demand for thicker wraps, dermatologists were not so often consulted for a troublesome blotchy, moist eruption about the neck and lower face. In those earlier days only the soft-furred animals were killed on account of their pelts, and only the well-to-do classes could afford to buy the beautiful skins. Now almost every man, woman, and child wears furs, and the increased demand necessitates dyed creations and the use of coarse-haired skins. Cheap, improperly colored furs now flood the market; and when the wearer becomes warm and moist, the insufficiently mordanted

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aniline dyes run, and inflame the delicate skin of the face and neck. So, if you are a wearer of furs, bear this source of irritation in mind, especially in the warmer days of winter.

Another type of dermatitis owes its origin to too frequent washing, particularly if such drying soaps as ivory and castile are used. We are not all made alike. Some of us have oily skins which require and tolerate frequent bathing; but many of us have tender, dry skins that rebel in cold weather if we use too much soap and water. Under such circumstances we must curtail our desire for perfect cleanliness, and be content with the knowledge that a dry skin, since it does not attract and retain dirt, is essentially a clean skin. In addition, this latter class should employ those soaps that contain an excess of fats over alkalies, should eschew very hot water, and should strive to overcome nature's deficiency by rub-

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bing mild and greasy ointments into the skin at night. To these dry-skinned individuals who suffer from chapped hands, from dry, red, and roughened arms, from legs which grow scaly and cracked above the boot-tops, let me recommend warm clothes and the English super-fatted cold cream soaps for the toilet, and cold cream and glycerine plasma for nightly inunctions.

Before leaving this class of external irritants, let me to say a word about underclothing. Wear no cheap colored material next the skin unless it is necessary. Not all manufacturers are perfect in their methods. Most of them, I fear, employ none but aniline dyes, and many of them fix these pigments hurriedly and incompletely. I pointed out in my allusions to dyed furs what a solvent action perspiration exerts; here too the dissolved coloring matter not infrequently poisons the skin and produces a blotchy, moist erup-

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tion, sometimes raised, which is far from agreeable.

I need not dilate here on the difficulty many experience in the use of wool next the skin. For these susceptible unfortunates, mixtures of silk and wool, or the substitution of heavy cotton, are a necessity; and for such delicate, dry skins I should advise also the avoidance of ribbed underclothes.

Last of all, never put any material next the skin which has not been washed. Do not take the dealer's word that the garment is clean. Animal fibers contain all sorts of irritating substances which often disappear in the tub; and all clothes, whether of animal or vegetable source, have been handled by many people before reaching your perhaps sensitive skin.

Dermatitis Medicamentosa. Eruptions of the skin following the ingestion of drugs form a subject too vast for me to enter

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upon here. Whole books have been written on this theme and many lectures could be devoted to its elucidation. The mere enumeration of the possibly noxious drugs would occupy some minutes, and I must content myself with a few words of warning. Do not take any drugs (especially balsams, the "blood purifiers," and the newer coal-tar products such as phenacetin, antipyrin, aspirin, etc.) without consulting a physician. Do not go to your apothecary for advice; it is often cheaper in the end to pay a doctor. The present crusade against "quack" remedies is known to you all, and is bearing fruit. Apart from alcohol, which forms the palatable and active ingredient in many of them, they often contain drugs which after ingestion produce acute outbreaks on the skin. These eruptions may consist of simple redness of the skin; or may present more important changes, such as pimples, hives, pustules, or blisters; or even result in great nod-

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ules, ulcers, or perhaps gangrene. The iodine and bromine salts that constitute the essential factors in " blood purifiers " and " soothing syrups " respectively are responsible for some of these graver accidents.

Dermatitis Calorica. The last type of dermatitis which we shall describe is that due to heat or cold. We have already touched upon most of the deleterious effects of cold in our description of eczema. Chapping of the hands, face, and legs, and the dried-up, prickly condition of the skin, due to a cold, dry atmosphere and too frequent washing with harsh soaps, are, I trust, still fresh in your minds. Let me add a word in regard to chilblains.

If the fingers or toes are moist and red, or become blue and numb out of doors and red and hot within doors, you probably have chilblains, and should take proper precautions. Out of doors, wear sufficiently warm, loose, woolen gloves

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or stockings, and easy boots. Avoid rubbers and arctics except in the actual wet. Take off your overshoes the moment you enter the house. Do not wear patent-leather shoes. When the hands or feet are already cold, warm them slowly. Do not put them into hot water, or too near the fire, or in direct contact with radiators or the hot water receptacles now used in carriages and automobiles. All of these comforts are suitable if the extremities are warm; but they are harmful enough when once the fingers or toes have been chilled.

During the winter months we think of sensations of cold only; but we must not forget that in a short while a different train of symptoms may arise. We have all suffered from sunburn, prickly heat and heat-rash; and so, when the hot days come, let us remember to be cautious. Do not wrap up the babies too warmly, nor allow the little boys when swimming to expose their bodies too long

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in the first hot days of summer. Go slowly at first in rolling up the sleeves and exposing the face and scalp to the sun; for after the winter's protection under long sleeves and flannels and dark clothes, our skins are keenly sensitive to the light rays of spring and summer. Do not wear open-work waists when sailing, for the curious pattern often photographed by the sun frequently annoys the wearer in the evening, when the whole neck and shoulders are exposed to the public gaze. If these precautions have been neglected, and the skin feels on fire or even blistered, be liberal in the use of mild dusting powders and keep quiet, eating and drinking little.

In this connection, but apart, scientifically, from *Dermatitis calorica*, it is appropriate to speak of the discomforts of excessive perspiration. This disagreeable condition, which goes by the name of hyperidrosis, is not limited to warm wea-

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ther — in fact it is perhaps more noticeable in the colder months. The hands and feet are the chief seats of the disorder, and cause the possessor great annoyance from burning and the inability to wear delicate fabrics without fear of injury; sometimes, too, from the disagreeable odor which arises from the decomposition of these animal fats. In such a crisis the patient should pay great attention to the general health, and obey all the mandates of modern hygiene. He should bathe the hands and feet twice daily in cool water and grain-alcohol half and half, dry the skin carefully with a soft bath towel, apply an abundance of absorbent powder, put on fresh stockings daily and have the discarded ones boiled, renew gloves frequently, wear low shoes (never patent leather), with gaiters in winter; and observe all the injunctions which have been given for the treatment of chilblains.

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URTICARIA

We come now to a different type of disease — urticaria, or hives, or nettle rash. You have all seen on the skin the firm, itchy lump called a wheal. A mosquito bite is the most familiar example. In this instance, following the injection of the insect's poison, there is an immediate rush of blood to the part — an influx so great that the local vessels cannot hold all the blood, and the fluid portion, together with some of the white cells, escapes through the walls of the small arteries. This is one of nature's means of self-protection in all inflammations. The white cells form a wall around the poison to prevent its diffusion. If the sting is a mild one, the wheal is red and not perceptibly raised; but if a considerable quantity of serum is poured out into the tissues, the local vessels are so constructed that more blood cannot reach the focus, and it becomes white and swollen

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because it requires time for them to be elaborated in the intestines, where, as I have said, the blood is intimately mixed with them.

There are several varieties of urticaria. The wheals may be large or small, but are always discrete. They may coalesce and form great areas of elevated plaques, sharply bounded and irregularly shaped. Large or small blisters may develop, and in very severe cases, all the constituents of the blood may escape and produce hemorrhages in the skin. In almost all cases of the disease a peculiar phenomenon may be observed. I have told you that the blood in urticaria is deficient in lime salts, and therefore less coagulable. If the skin is pressed upon or accidentally rubbed, the fluid parts escape, and red or white wheals result. When this reaction is evoked artificially it is called *Urticaria factitia*; and in this manner long lines may be produced, or on certain skins we

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can write our names and draw pictures which will persist for some moments.

What can be done to prevent this disease? After an attack of hives, try to think what was eaten at the last meal, and if one of the suspicious articles figured in your bill of fare, avoid it in future. In the midst of an outbreak, wear loosely fitting clothes, and do not scratch, no matter how severe the itching. Any local injury to the skin will immediately provoke fresh wheals and consequent greater itching. Take a good dose of castor-oil to rid the intestines of the noxious food, and live on stale bread and milk (unless milk is indigestible) for twenty-four hours. Milk, you know, contains lime salts and is therefore especially suitable. Until the attack has subsided, eat simple, easily digested foods, such as lean broiled steak or chops, baked potatoes, boiled macaroni, green vegetables, toast, etc. If a doctor is not within reach, dust a

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mild toilet powder gently over the skin; but here, as in all other medical crises, it is better to appeal to a good physician than to treat oneself.

SEBORRHOEA

Another class of diseases which affect many of us sooner or later in life arises from disorders of the sebaceous glands. These glands occur within the skin in almost all parts of our bodies. Their function is to produce the fatty material which keeps our skin soft and our hair pliable; and they also act with many other organs as safety valves in times of stress, to eliminate poisons from the body. The little depressions in the skin which you call pores are the orifices of these glands, and where hairs exist, they empty their products out of sight on the shaft of the hair, below the surface of the integument. It is the condition and behavior of these glands which determine in no small degree the softness and health of

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the skin, and the beauty of the complexion; but when once they pursue a wrong course, numerous cosmetic ills follow in their train. What originally produces these false courses is at present but little understood by dermatologists, and must not detain us here.

DANDRUFF AND BALDNESS

One of the commonest reasons which leads a person to consult a skin doctor is trouble with the hair. I wish it were possible for parents to educate their children in the proper hygiene of the scalp, and to see that their instructions are rigidly enforced until the child is sufficiently matured to appreciate their value. Perhaps the greatest cause of premature loss of hair is heredity. We cannot select our parents, but we can, in our turn, and should, exert our parental influence to prevent our own children from following our footsteps, if faulty.

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I described to you in the beginning how the new-born baby was covered with a grease which was vital to its welfare before birth, but which afterward, if not removed became a menace to the health of the skin. I believe that the care of the scalp should begin at the beginning. Therefore clean away the cradle-cap as soon as possible, and in the first months of life wash the scalp daily with soap and water, for the emunctories of the baby are very active. At the end of four or five months, a bi-weekly shampoo is sufficient, but this practice should be continued up to the end of the second year. From then until the age of five, weekly washings of the scalp are none too frequent, and afterwards fortnightly shampoos should be the rule until adult life is reached. At the age of twenty or thereabouts, the individual must be guided by circumstances. As you know, there are greasy scalps and dry scalps; and in the former instance I consider it a good plan

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to continue the fortnightly removal of superfluous fat from the hair, while in the latter case a monthly shampoo is sufficient. These rules should be followed throughout life unless the conditions change.

In my experience, however, the public is either ignorant of the proper care of the scalp, or else it is led astray by the optimistic advice of advertisements. There are men who wash their heads every day in the morning tub, and there are men who neglect their scalps completely. There are men and boys who saturate their hair daily in salt water during the swimming season. All of these practices are harmful, in my opinion. There are many men and women who leave the care of the scalp to their hair-dressers, and take their necessarily incomplete knowledge as law. Their ambition, of course, is to send their clients home with spotless scalps and they employ every energetic means, both physical and chemical to

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reach this goal. There is no necessity for scrubbing any scalp as if it were dirty linen; and it is wrong to apply to a healthy scalp ammonia or soda, or alcoholic hair-washes and medicated soaps. Too much of the natural and necessary oil is thus removed from the skin and hair. I have no objection to professional shampooers; but let them use, gently but thoroughly, pure, simple, non-medicated soaps; and when dandruff or other disease is present, let them advise a physician's care instead of suggesting the thousand and one "dandruff cures" and "hair restorers," of which the ingredients are usually unknown and frequently vicious.

In addition to these hints about the washing of the scalp, let me add other fragmentary bits of advice which I think will tend to ward off dandruff and its sequela, baldness, and possibly other diseases of the hair.

Take your own comb and brush to

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your hair-dresser, and bring them home afterwards. See that they are kept clean by frequent washing and exposure to the sun. Have your barber wash his hands before touching your scalp. Let no one else use your combs and brushes. Have the teeth of the comb blunt and the bristles of the brush soft, and comb and brush the hair, not the skin of the head. Do not have your scalp massaged except by a physician's advice. Do not have the hair singed: it is a useless waste of money and disfigures the hair. Do not have the hair waved any more often than is necessary; and above all, in this unwise practice avoid too hot irons. Wear as little extra hair as possible, for the present custom of heaping on puffs and pads and aureoles and curls absolutely prevents the proper aeration of the scalp. Do not wear heavy or unventilated hats, and do not keep them on any longer than is necessary. The ideal custom would be to go without head-covering except in the hot

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and cold months of the year. But this would not be safe in the direct sunlight of summer, from the first of June, let us say, to September fifteenth. We have not the black, naturally greasy hair of negroes or Indians, and cannot tolerate such exposure. Apart from its danger to life, the great heat of the direct rays of the summer sun abstract the fat, bleaching the hair and producing the effect of fever on the scalp and the underlying tissues. Last of all, do not dye your hair. It is not becoming, always gives rise to gossip, often injures the hair or adjacent skin, and sometimes causes serious consequences to life.

You see, therefore, that much can be done to promote the welfare of the scalp; but if, through ignorance or neglect, dandruff or other diseases develop, go to a competent physician at once. If you are young, and the condition of dandruff is recent, it is easily remedied; but if this abnormal state is allowed to continue,

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especially after the age of twenty, you need feel no surprise or chagrin if the hair begins to fall out in a few months or years. Then the outlook is different. Many people consult their specialist at this late hour, and make his part a difficult one, for he knows that chronic dandruff and loss of hair (particularly when baldness is a family trait) is an almost incurable malady. Nevertheless, persistence on the physician's part, and hopeful coöperation on the side of the patient will retard for years the gradual, but inevitable thinning of the hair. It is the careless individual who is bald at twenty-five.

CANITIES

Gray hairs in the young are a dreaded but frequent occurrence. Under ordinary circumstances they are one of a parent's unwelcome gifts to his child. Medicine has not learned the remedy for this evil; but proper bodily care will lessen the

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rapidity of their growth, and early hours, the cultivation of a cheerful disposition, habitual fresh air, exercise, avoidance of bodily and mental fatigue, all assist in delaying the malady.

HYPERTRICHOSIS

The growth of hair where it does not belong is another depressing anomaly. There is no use in pulling it out, for you cannot destroy its "root" by this short-sighted manoeuvre. On the contrary, this faulty procedure causes a local inflammation which sends more blood to the part; and more blood, you know, means more nourishment, so that instead of the former, perhaps delicate, colorless hair, you will see a stouter, darker hair replacing it. Do not have recourse to the much-vaunted depilatories; not only may they be dangerous, but they are useless in preventing the ultimate regrowth of the hair. Do not allow an en-

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thusiastic physician or "quack" to promise a cure by means of X-rays. This is a subtle agent, which, in incompetent hands, is capable of provoking serious and permanent injury; and at its best must destroy so much tissue, to produce the desired purpose, that the resulting depressions in the skin, at the site of each hair, and the ensuing overgrowth of superficial blood vessels, gives rise to a condition worse than the original deformity.

Fortunately, thanks to the discovery of an American medical man, there is a scientific, harmless procedure which will rid the face of superfluous hairs and produce in favorable cases no resultant disfigurement. I refer, of course, to the electric needle. But here again I must caution you against placing yourselves in incompetent hands. To do this trying work properly, one must have knowledge of the anatomy of the skin and of electric batteries, besides a steady hand and strong eyesight. The untutored operator

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uses too strong a current and thus causes the patient useless pain and future scarring of the skin; and by her probable ignorance of the "lay of the land," fails to reach the vital point of the hair, so that the hair is soon reformed. All these unnecessary experiences have driven many a desperate unfortunate from this only hope of permanent relief into the hands of unscrupulous medical charlatans.

ACNE

Acne vulgaris is another form of sebaceous disorder. You are all familiar with the greasy, dull brownish skin, the "black-heads," the pimples, pustules and depressed scars of this disease, which disfigures so many young faces and sometimes backs and chests as well. Few of us in our youth escape these unattractive blemishes; but luckily most of us outgrow them before we reach the age of twenty. There are a few unfortu-

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nates, however, who have to struggle against the disease for years; and for their sakes especially let me say a few words.

Acne vulgaris, like all of this class of sebaceous anomalies which we are now considering, may owe its origin to toxic products arising in the digestive tract. So be careful of your diet. Modern chemists seem to regard albuminous substances as especially capable of producing putrefaction in the intestines; therefore cut down the consumption of your animal diet to fresh beef, chicken, and lamb, roasted or broiled. Do not eat hashes or fried meats or sausages, veal, pork, bacon, ham or game. Cooked greasy foods are notoriously indigestible; consequently avoid fried meats, vegetables or fruits, and unskimmed soups. Shun the heavy vegetables such as cabbage, turnips, beets, Brussels sprouts, onions and the like. Do not drink coffee or chocolate or

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beers, liquors, or liqueurs. All of these hearty foods tend to make an acne still more greasy; but I can not promise you that abstention from them will cure the disease. Observe all the modern concepts of hygiene. Use plenty of water externally and internally. Allow yourself an abundance of sleep. Live in the fresh air as much as possible day and night. Take regular out-of-door exercise. Walking is sufficient, but have plenty of it. Attention to these daily rules of health do not form a panacea; but I assure you that they all count for the good, in acne as in all other diseases of mind and body.

The sequence of events in the formation of acne lesions is somewhat as follows: some unknown agent (perhaps the toxins of indigestion, as I have hinted) produce a suitable soil for the growth of the acne bacillus and for the overgrowth of the *staphylococcus albus*, a normal denizen of the skin. Overactivity of the sebace-

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ous glands results, and this superabundant *sebum* or fat finds its way to the skin, and produces the greasy appearance with which we are all familiar. This over-supply of fat dilates and clogs the follicles or pores of the skin, and gives the complexion a coarse look. The carbon and dirt in the air collect on this sticky substance, and the "black-head" or comedo is formed. This plug acts as a foreign body, and as usual in such circumstances, nature tries to rid herself of this encumbrance by bringing blood to the part, so that the white cells or leucocytes leave the vessel and form a wall about it to protect the whole organism from the disease. In this way the pimple or papule develops. The bacterium which normally inhabits the skin, the *staphylococcus albus*, then finds a suitable soil for rapid growth, and taking advantage of its opportunities, produces a small boil or pustule. Finally the whole structure may break down and form an abscess.

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All of this apparently useless and trying process is in reality nature's method of ridding the skin of the original poison, — a process which constitutes the disease of acne.

If you have carefully followed the steps in this evolution, you will appreciate why we should do our best to prevent the original intoxication, with its ensuing overactivity of the sebaceous glands which we call seborrhoea. That is why I have laid so much stress on your observing the proper rules of diet and general health. But supposing your most conscientious attention has failed to prevent the appearance of acne, what can be done ?

If the skin becomes greasy, wash it gently with some drying soap like castile or ivory. You need not be afraid to do this as often as is necessary. Take a flannel rag and give the skin a gentle, but thorough shampoo with warm water. Cold water is not so cleansing or so bene-

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facial in other ways. If the skin remains shiny after this washing it means that all of the soap has not been worked up into a lather. This of course looks bad and tends also to block up the pores still further. Therefore apply more warm water and friction. If "black-heads" have formed, try to remove them. The best way to accomplish this is to apply hot cloths to the face for perhaps five minutes; then rub in gently some vaseline to soften the mouths of the pores; and at the end of fifteen minutes, placing an old watch key with dull edges over the "black-head," try with gentle pressure and a rotary motion to express the contents of the follicles. If the fatty plug comes out by this gentle manoeuvre, well and good; but do not try to remove it if it is obdurate. Wounding the skin by over-pressure does harm rather than good: for if the tissues are bruised, the ever-present bacteria are enabled to multiply, and bring to pass just what you were trying to

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avoid, a disfiguring papule or pustule with its subsequent scar. Remember this, please.

If you have failed in your endeavors to remove the grease and the "black-heads" from the skin by these simple manipulations, or if pimples and the other disagreeable lesions of acne have developed, consult your physician. He will do what he can for you; but do not be down-hearted if the disease hangs on, the treatment of acne is one of our stumbling blocks.

Some of our best dermatologists suggest X-rays in the long, intractable cases; but I would admonish you not to listen to this advice, except from acknowledged experts. Cure by this method alone means the destruction of sebaceous glands, and these organs are not those principally at fault. Furthermore, we need these glands for the future well-being of our skins; and with their destruction come corresponding pit-like

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depressions similar to the scars of small-pox, while the intervening skin often atrophies and becomes covered with superficial blood vessels. Lastly the deep reaction necessary for the breaking down of sebaceous glands may cause an X-ray burn, one of the worst accidents which can befall the skin.

There is a new form of treatment, however, which is capable in some instances of bringing to pass considerable amelioration of these distressing cases. You all know of the injection of vaccines to combat disease. This method consists in growing on artificial soils outside the body the bacteria which cause the specific disease, and then injecting under the skin one or another of the resulting products. Sometimes an emulsion of the living bacteria is used, sometimes their dead bodies are substituted. This branch of medical therapeutics is only in its infancy. As yet but little progress has

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been made by the use of the acne bacillus vaccine, except with a few particularly gifted workers. On the other hand, where pustules are abundant, considerable benefit has been derived in certain instances from the subcutaneous injection of *staphylococcus* vaccine which diminishes the congestion and pustulation produced by this normal denizen of the skin, when the unknown toxin has prepared the soil. Still further aid in this new vaccination method is obtained by gentle superficial exposures to the X-rays. When the intricate processes caused by this injected material are at their climax, proper exposure to the rays produces congestion of the part. The blood in general has been modified by the previous injection of the vaccine, and becomes more capable of destroying the active agents of the disease. Of course the more this prepared blood is focussed at the site of the disease, the greater is the opportunity for its specific destructive powers.

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Acne Rosacea. There is another type of acne which some of us encounter before our life is done. This variety appears in or after middle life, and affects the central portions of the forehead, the nose and the chin. It produces the flushed and sometimes pimply foreheads, cheeks, and chins, and the enlarged noses of temperate and intemperate alike. There is a popular notion that drink alone accounts for these appearances. This is far from the truth. Many cases arise from as yet unrecognized causes, but here again we are inclined to accuse intestinal or other internal intoxications. Constant exposure to wind and sun seems to play an important part. Tight collars, which constrict the neck and prevent the return of blood from the face, form another, at least a contributory cause.

From these hints you can get an insight into what to avoid if you become the victim of this disease. In addition, I should advise you to shun stimulating

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foods such as condiments, highly seasoned meats, hot soups or drinks of any kind. Use only warm water on the face; and if you sail or motor, wear thick, brown veils. Do not come in from the cold and stand in front of open fires. Do not forget these rules — they are all important. Go to your doctor when the disease first appears because in this instance he can help you decidedly. The congestions and burnings and eruptions can be greatly alleviated by mild sulphur and camphor washes, and perhaps in the obstinate cases by bacterial vaccines; while nasal deformities can be reduced by the knife.

KERATOSIS SENILIS AND EPITHELIOMA

Those of you who have passed middle age or perhaps some of you who are younger but have been much addicted to out-of-door life, may have noticed small, rough, red or brown spots raised on your

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face, particularly on the forehead, nose, and cheeks, or on the back of your hands. Perhaps this stage of the disease has gone by, or has never existed, but the skin is now rough and warty and scaly. Possibly these local changes have been present for several years, and you have remarked that the skin bleeds easily when these altered areas are picked or bruised. This condition is known as *Keratosi senilis*. Though it is not a very serious affection, look out for it. Do not expect it to disappear with time for it will not; consult your physician and let him remove these apparently innocent spots. In time, if allowed to remain, they may become epitheliomata, or skin cancers. The original disease is superficial and may be cured by scraping or cauterization, and will not return to the same spot. If left to itself, however, the epidermis or outer layer of the skin will break through its lower boundaries and grow downwards. This change means

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cancer, — a relatively benign form, to be sure, but one which should be destroyed at once to prevent its spreading.

In some people this pre-cancerous stage may be wanting; while in consequence of some local injury which may have been improperly treated, or which may have been repeated once or twice, the skin refuses to heal, and undergoes, whether slowly or rapidly, a cancerous degeneration. This type of epithelioma shows an especial predilection for the nose and the region of the lower eyelid. The growth spreads slowly, leaving an ulcer or a subsequent scar in the center; its edges are either white, rolled up and hard, or red and superficially ulcerated. This thickening of the border is produced by an overgrowth of the upper layers of the skin, which may assume the form of the round, glistening bodies which we call epithelial pearls. There is no pain associated with the metamorphosis, but it bleeds frequently on the least provoca-

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tion. In the event of such a growth in the skin, go to a dermatologist or a surgeon at once and let him decide whether the knife, or radium, or X-rays, are the proper means of removal.

BOILS

Furunculosis. There is of course no need of my describing to you the characteristics of boils, for many of you know their painful and unsightly nature too well from personal experience. But I do want to tell you how to avoid them. The man who allows himself to run down has already taken the first step in preparing his skin for the growth of bacteria. Sterilize the skin by frequent warm baths, in which plenty of good soap is used. Cleaning the skin is especially necessary when people are stout, and folds of the skin become easily macerated by contiguity. Take particular care of the skin where hair grows. Wear clean clothes. Do not

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dress your babies too warmly. In the summer season do not allow little boys to remain too long in fresh water, for this is debilitating, and softens the skin to such an extent that it becomes easily infected. Do not wear stiff collars which are ragged, for constant irritation of the neck damages the tissues and permits the normal bacteria of the skin to get the upper hand. There is no need in this instance for me to urge you to consult some medical man, — pain and pride both will drive you to one. Individual boils are easily cured by the knife, or by sterilizing the skin, and subsequently applying corrosive sublimate poultices, or washes of strong ichthyol lotions or ointments. In some cases, however, boils become chronic and often difficult to treat; but modern science has devised a method to meet this debilitated state of the body and skin. In my treatment of the subject of acne you will remember that I referred, rather sceptically per-

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haps, to the benefits of inoculating specific vaccines into the skin. Here, however, I can be more optimistic: we understand better the germs which cause boils, and can readily grow them outside the body, and thus prepare a vaccine to combat them. In other words we have at our command today a reliable scientific weapon to wield against this disease.

WARTS

Verrucae. Once more I refer to a condition which calls for no detailed description on my part. These peculiar growths are familiar to you all, for in childhood many of you bore them on your hands, and today perchance you are watching them on the hands, face, scalp, or feet of your children. Although physicians must regard warts as contagious (at least contagious in the same individual from one part to another) no one has thus far discovered the organism which produces

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them. Warts are strange tumors: they appear singly or in great numbers, and when once present may be very difficult to cure; but they are comparatively short lived, and sooner or later disappear spontaneously. This unaccountable propensity to resist scientific medical treatment, and then suddenly vanish unaided, has led to a popular belief in the thousand and one "sure cures;" for when a medicine is used and the disease disappears it is natural to believe in its efficacy. This frequent unresponsiveness to most forms of treatment, when the warts at the end of another week, whether one or one hundred, may be merely memories, prompts me to add one more word of warning. Never allow a physician to cut out a wart, especially if it be on the foot, or destroy it with strong acids; for it seems to me unwise to produce a scar, often in a conspicuous place, when by exercising a little patience you will sooner or later have Nature's assistance to rid

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you of this disfiguring condition and leave your skin unharmed. Personally I prefer to use artificial snow if the patient obliges me to do anything. This produces a good scar and is apt to effect a permanent cure.

I have now spoken to you of some of the more or less preventable skin diseases which may fall to your lot. There are others which are perhaps more common and far more calamitous; but many of them cannot be warded off, and many, though better known, are not so frequently encountered in the well-to-do classes. I have endeavored to outline to you simple methods of avoiding disease. The old adage, "an ounce of prevention is worth a pound of cure" is one of the truest maxims ever spoken. If, however, the disease has commenced, consult at once some one who stands among the highest in his specialty, if your purse is limited tell him frankly its size, conceal

NO MORE ABANDONMENT

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from him nothing regarding yourself and your malady, implicitly follow his advice, have faith in him and in the fact that you will recover, and stick to him until you have exhausted the best means at his disposal, or until you have lost your confidence. Then confess that you are discouraged and want to try some one else.

1. The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation

2.

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